# RAW SEQUENCE LISTING

**The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) no errors detected.**

Application Serial Number: 10/520,210

Source: PCT/10

Date Processed by STIC: 1/13/05

# *ENTERED*

PCT

RAW SEQUENCE LISTING                      DATE: 01/13/2005
PATENT APPLICATION:  US/10/520,210        TIME: 17:12:13

Input Set : **A:\seqlist.txt**
Output Set: **N:\CRF4\01132005\J520210.raw**

```
 3 <110> APPLICANT: Yocum , R. Rogers
 4        Patterson, Thomas A.
 5        Pero, Janice G.
 6        Hermann, Theron
 8 <120> TITLE OF INVENTION: MICROORGANISMS AND PROCESSES FOR ENHANCED PRODUCTION OF
 9        PANTOTHENATE
11 <130> FILE REFERENCE: BGI-154US
```
C--> 13 `<140> CURRENT APPLICATION NUMBER: US/10/520,210`
C--> 13 `<141> CURRENT FILING DATE: 2005-01-03`
```
13 <150> PRIOR APPLICATION NUMBER: PCT/US2003/021336
14 <151> PRIOR FILING DATE: 2003-07-02
16 <160> NUMBER OF SEQ ID NOS: 31
18 <170> SOFTWARE: PatentIn Ver. 2.0
20 <210> SEQ ID NO: 1
21 <211> LENGTH: 194
22 <212> TYPE: DNA
23 <213> ORGANISM: Artificial Sequence
25 <220> FEATURE:
26 <223> OTHER INFORMATION: Description of Artificial Sequence:promoter
27        sequence
29 <220> FEATURE:
30 <221> NAME/KEY: -35_signal
31 <222> LOCATION: (136)..(141)
33 <220> FEATURE:
34 <221> NAME/KEY: -10_signal
35 <222> LOCATION: (159)..(164)
37 <400> SEQUENCE: 1
38 gctattgacg acagctatgg ttcactgtcc accaaccaaa actgtgctca gtaccgccaa 60
39 tatttctccc ttgaggggta caaagaggtg tccctagaag agatccacgc tgtgtaaaaa 120
40 ttttacaaaa aggtattgac tttccctaca gggtgtgtaa taatttaatt acaggcgggg 180
41 gcaaccccgc ctgt                                                  194
44 <210> SEQ ID NO: 2
45 <211> LENGTH: 163
46 <212> TYPE: DNA
47 <213> ORGANISM: Artificial Sequence
49 <220> FEATURE:
50 <223> OTHER INFORMATION: Description of Artificial Sequence:promoter
51        sequence
53 <220> FEATURE:
54 <221> NAME/KEY: -35_signal
55 <222> LOCATION: (113)..(118)
57 <220> FEATURE:
58 <221> NAME/KEY: -10_signal
```

**RAW SEQUENCE LISTING**            DATE: 01/13/2005
PATENT APPLICATION:   **US/10/520,210**     TIME: 17:12:13

Input Set : **A:\seqlist.txt**
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```
 59 <222> LOCATION: (136)..(141)
 63 <400> SEQUENCE: 2
 64 gcctacctag cttccaagaa agatatccta acagcacaag agcggaaaga tgttttgttc 60
 65 tacatccaga acaacctctg ctaaaattcc tgaaaaattt tgcaaaaagt tgttgacttt 120
 66 atctacaagg tgtggtataa taatcttaac aacagcagga cgc               163
 69 <210> SEQ ID NO: 3
 70 <211> LENGTH: 127
 71 <212> TYPE: DNA
 72 <213> ORGANISM: Artificial Sequence
 74 <220> FEATURE:
 75 <223> OTHER INFORMATION: Description of Artificial Sequence:promoter
 76       sequence
 78 <220> FEATURE:
 79 <221> NAME/KEY: -35_signal
 80 <222> LOCATION: (34)..(39)
 82 <220> FEATURE:
 83 <221> NAME/KEY: -10_signal
 84 <222> LOCATION: (58)..(63)
 86 <220> FEATURE:
 87 <221> NAME/KEY: -35_signal
 88 <222> LOCATION: (75)..(80)
 90 <220> FEATURE:
 91 <221> NAME/KEY: -10_signal
 92 <222> LOCATION: (98)..(103)
 94 <400> SEQUENCE: 3
 95 gaggaatcat agaattttgt caaaataatt ttattgacaa cgtcttatta acgttgatat 60
 96 aatttaaatt ttatttgaca aaaatgggct cgtgttgtac aataaatgta gtgaggtgga 120
 97 tgcaatg                                                     127
100 <210> SEQ ID NO: 4
101 <211> LENGTH: 24
102 <212> TYPE: DNA
103 <213> ORGANISM: Artificial Sequence
105 <220> FEATURE:
106 <223> OTHER INFORMATION: Description of Artificial Sequence:ribosome
107       binding site
109 <400> SEQUENCE: 4
110 taaacatgag gaggagaaaa catg                                    24
112 <210> SEQ ID NO: 5
113 <211> LENGTH: 28
114 <212> TYPE: DNA
115 <213> ORGANISM: Artificial Sequence
117 <220> FEATURE:
118 <223> OTHER INFORMATION: Description of Artificial Sequence:ribosome
119       binding site
121 <400> SEQUENCE: 5
122 attcgagaaa tggagagaat ataatatg                                28
124 <210> SEQ ID NO: 6
125 <211> LENGTH: 13
126 <212> TYPE: DNA
```

RAW SEQUENCE LISTING                    DATE: 01/13/2005
PATENT APPLICATION:  US/10/520,210      TIME: 17:12:13

Input Set : **A:\seqlist.txt**
Output Set: **N:\CRF4\01132005\J520210.raw**

```
127 <213> ORGANISM: Artificial Sequence
129 <220> FEATURE:
130 <223> OTHER INFORMATION: Description of Artificial Sequence:ribosome
131       binding site
133 <400> SEQUENCE: 6
134 agaaaggagg tga                                          13
136 <210> SEQ ID NO: 7
137 <211> LENGTH: 23
138 <212> TYPE: DNA
139 <213> ORGANISM: Artificial Sequence
141 <220> FEATURE:
142 <223> OTHER INFORMATION: Description of Artificial Sequence:ribosome
143       binding site
145 <220> FEATURE:
146 <221> NAME/KEY: misc_feature
147 <222> LOCATION: 17, 18, 19, 20
148 <223> OTHER INFORMATION: n = a, t, c, or g
150 <400> SEQUENCE: 7
```
W--> 151 ttaagaaagg aggtgannnn atg                             23
```
153 <210> SEQ ID NO: 8
154 <211> LENGTH: 23
155 <212> TYPE: DNA
156 <213> ORGANISM: Artificial Sequence
158 <220> FEATURE:
159 <223> OTHER INFORMATION: Description of Artificial Sequence:ribosome
160       binding site
162 <220> FEATURE:
163 <221> NAME/KEY: misc_feature
164 <222> LOCATION: 16, 17, 18, 19, 20
165 <223> OTHER INFORMATION: n = a, c, t, or g
167 <400> SEQUENCE: 8
```
W--> 168 ttagaaagga ggtgannnnn atg                             23
```
170 <210> SEQ ID NO: 9
171 <211> LENGTH: 23
172 <212> TYPE: DNA
173 <213> ORGANISM: Artificial Sequence
175 <220> FEATURE:
176 <223> OTHER INFORMATION: Description of Artificial Sequence:ribosome
177       binding site
179 <220> FEATURE:
180 <221> NAME/KEY: misc_feature
181 <222> LOCATION: 14, 15, 16, 17, 18, 19, 20
182 <223> OTHER INFORMATION: n = a, c, t, or g
184 <400> SEQUENCE: 9
```
W--> 185 agaaaggagg tgannnnnnn atg                             23
```
187 <210> SEQ ID NO: 10
188 <211> LENGTH: 22
189 <212> TYPE: DNA
190 <213> ORGANISM: Artificial Sequence
```

RAW SEQUENCE LISTING                    DATE: 01/13/2005
PATENT APPLICATION:  US/10/520,210      TIME: 17:12:13

Input Set : **A:\seqlist.txt**
Output Set: **N:\CRF4\01132005\J520210.raw**

```
      192 <220> FEATURE:
      193 <223> OTHER INFORMATION: Description of Artificial Sequence:ribosome
      194       binding site
      196 <220> FEATURE:
      197 <221> NAME/KEY: misc_feature
      198 <222> LOCATION: 14, 15, 16, 17, 18, 19
      199 <223> OTHER INFORMATION: n = a, c, t, or g
      201 <400> SEQUENCE: 10
W--> 202 agaaaggagg tgannnnnna tg                                    22
      204 <210> SEQ ID NO: 11
      205 <211> LENGTH: 25
      206 <212> TYPE: DNA
      207 <213> ORGANISM: Artificial Sequence
      209 <220> FEATURE:
      210 <223> OTHER INFORMATION: Description of Artificial Sequence:ribosome
      211       binding site
      213 <400> SEQUENCE: 11
      214 ccctctagaa ggaggagaaa acatg                                 25
      216 <210> SEQ ID NO: 12
      217 <211> LENGTH: 24
      218 <212> TYPE: DNA
      219 <213> ORGANISM: Artificial Sequence
      221 <220> FEATURE:
      222 <223> OTHER INFORMATION: Description of Artificial Sequence:ribosome
      223       binding site
      225 <400> SEQUENCE: 12
      226 ccctctagag gaggagaaaa catg                                  24
      228 <210> SEQ ID NO: 13
      229 <211> LENGTH: 23
      230 <212> TYPE: DNA
      231 <213> ORGANISM: Artificial Sequence
      233 <220> FEATURE:
      234 <223> OTHER INFORMATION: Description of Artificial Sequence:ribosome
      235       binding site
      237 <400> SEQUENCE: 13
      238 ttagaaagga ggatttaaat atg                                   23
      240 <210> SEQ ID NO: 14
      241 <211> LENGTH: 23
      242 <212> TYPE: DNA
      243 <213> ORGANISM: Artificial Sequence
      245 <220> FEATURE:
      246 <223> OTHER INFORMATION: Description of Artificial Sequence:ribosome
      247       binding site
      249 <400> SEQUENCE: 14
      250 ttagaaagga ggtttaatta atg                                   23
      252 <210> SEQ ID NO: 15
      253 <211> LENGTH: 23
      254 <212> TYPE: DNA
      255 <213> ORGANISM: Artificial Sequence
```

RAW SEQUENCE LISTING                          DATE: 01/13/2005
PATENT APPLICATION:  US/10/520,210            TIME: 17:12:13

Input Set : A:\seqlist.txt
Output Set: N:\CRF4\01132005\J520210.raw

```
    257 <220> FEATURE:
    258 <223> OTHER INFORMATION: Description of Artificial Sequence:ribosome
    259       binding site
    261 <400> SEQUENCE: 15
    262 ttagaaagga ggtgatttaa atg                                      23
    264 <210> SEQ ID NO: 16
    265 <211> LENGTH: 23
    266 <212> TYPE: DNA
    267 <213> ORGANISM: Artificial Sequence
    269 <220> FEATURE:
    270 <223> OTHER INFORMATION: Description of Artificial Sequence:ribosome
    271       binding site
    273 <400> SEQUENCE: 16
    274 ttagaaagga ggtgtttaaa atg                                      23
    276 <210> SEQ ID NO: 17
    277 <211> LENGTH: 28
    278 <212> TYPE: DNA
    279 <213> ORGANISM: Artificial Sequence
    281 <220> FEATURE:
    282 <223> OTHER INFORMATION: Description of Artificial Sequence:ribosome
    283       binding site
    285 <400> SEQUENCE: 17
    286 attcgagaaa ggaggtgaat ataatatg                                 28
    288 <210> SEQ ID NO: 18
    289 <211> LENGTH: 27
    290 <212> TYPE: DNA
    291 <213> ORGANISM: Artificial Sequence
    293 <220> FEATURE:
    294 <223> OTHER INFORMATION: Description of Artificial Sequence:ribosome
    295       binding site
    297 <400> SEQUENCE: 18
    298 attcgagaaa ggaggtgaat aataatg                                  27
    300 <210> SEQ ID NO: 19
    301 <211> LENGTH: 28
    302 <212> TYPE: DNA
    303 <213> ORGANISM: Artificial Sequence
    305 <220> FEATURE:
    306 <223> OTHER INFORMATION: Description of Artificial Sequence:ribosome
    307       binding site
    309 <400> SEQUENCE: 19
    310 attcgtagaa aggaggtgaa ttaatatg                                 28
    312 <210> SEQ ID NO: 20
    313 <211> LENGTH: 51
    314 <212> TYPE: DNA
    315 <213> ORGANISM: Artificial Sequence
    317 <220> FEATURE:
    318 <223> OTHER INFORMATION: Description of Artificial Sequence:5' PCR primer
    319 <223> OTHER INFORMATION: for serA gene
W--> 321 <400> 20
```

RAW SEQUENCE LISTING ERROR SUMMARY       DATE: 01/13/2005
PATENT APPLICATION:   US/10/520,210       TIME: 17:12:14

Input Set : **A:\seqlist.txt**
Output Set: **N:\CRF4\01132005\J520210.raw**

**Please Note:**
Use of n and/or Xaa have been detected in the Sequence Listing. Please review the
Sequence Listing to ensure that a corresponding explanation is presented in the <220>
to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:7; N Pos. 17,18,19,20
Seq#:8; N Pos. 16,17,18,19,20
Seq#:9; N Pos. 14,15,16,17,18,19,20
Seq#:10; N Pos. 14,15,16,17,18,19

**VERIFICATION SUMMARY**            DATE: 01/13/2005
PATENT APPLICATION:  US/10/520,210     TIME: 17:12:14

Input Set : **A:\seqlist.txt**
Output Set: **N:\CRF4\01132005\J520210.raw**

L:13 M:270 C: Current Application Number differs, Replaced Current Application No
L:13 M:271 C: Current Filing Date differs, Replaced Current Filing Date
L:151 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:7 after pos.:0
L:168 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:8 after pos.:0
L:185 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:9 after pos.:0
L:202 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:10 after pos.:0
L:321 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:20
L:333 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:21
L:345 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:22
L:357 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:23
L:369 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:24
L:515 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:25